

### Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### Listing of Claims:

1-15. (cancelled)

16. (currently amended): A method of depositing an aluminum nitride layer on an exposed surface of previously deposited insulating layer on a substrate, said method comprising:

treating the exposed surface with hydrogen or a gaseous source of hydrogen in the presence of a plasma; and

depositing the aluminum nitride layer over the exposed surface,

wherein the hydrogen treatment occurs prior to or during the deposition of the aluminum nitride layer, and wherein ~~the extent~~ a duration and plasma power of the hydrogen treatment are sufficient to improve the crystal orientation of the deposited aluminum nitride layer is such that the x-ray diffraction peak half width on a crystallographic plane of the deposited aluminum nitride layer is narrowed relative to the x-ray diffraction peak half width on the crystallographic plane of an aluminum nitride layer deposited in the absence of the hydrogen treatment.

17. (previously presented): The method as claimed in Claim 16 wherein the plasma is an Inductively Coupled Plasma.

18. (previously presented): The method as claimed in Claim 17 wherein the substrate is placed on an RF biased platen.

19. (previously presented): The method as claimed in Claim 18 wherein the platen is heated.

20. (previously presented): The method as claimed in Claim 16 wherein the aluminum nitride layer is deposited as a piezoelectric layer of an acoustic wave device.

21. (previously presented): A method of depositing an aluminum nitride layer on an exposed surface of previously deposited insulating layer on a substrate, said method comprising:

treating the exposed surface with hydrogen or a gaseous source of hydrogen in the presence of a plasma; and

depositing the aluminum nitride layer over the exposed surface,

wherein the hydrogen treatment occurs prior to or during the deposition of the aluminum nitride layer, and wherein the plasma is supplied by a Reactive Ion Etching process.

22. (previously presented): The method as claimed in Claim 21 wherein the hydrogen treatment time is less than 15 minutes.

23. (previously presented): The method as claimed in Claim 21 wherein the aluminum nitride layer is deposited as a piezoelectric layer of an acoustic wave device.

24. (currently amended): The method of treating an aluminum nitride layer including subjecting the aluminum nitride layer to atomic hydrogen so as to enhance the  $\langle 111 \rangle$  crystallographic orientation of a conductive layer deposited on the aluminum nitride layer relative to the  $\langle 111 \rangle$  crystallographic orientation of a conductive layer deposited on an aluminum nitride layer which has not been subjected to atomic hydrogen.

25. (previously presented): The method as claimed in Claim 24 wherein the aluminum nitride layer is deposited as a piezoelectric layer of an acoustic wave device.

26. (previously presented): The method as claimed in Claim 24 further including simultaneously subjecting the aluminum nitride layer to hydrogen plasma and depositing the conductive layer by metallic sputtering.